

What is claimed is:

1. An in-plane switching (IPS) mode liquid crystal display (LCD) device comprising:

5 first and second substrates;

a plurality of gate and data lines crossing each other on the first substrate so as to define a plurality of pixel regions;

a plurality of thin film transistors, each thin film transistor formed at a crossing point of the gate and data lines;

10 a common line formed in the pixel region for being parallel to the gate line;

a pair of electrodes formed in the pixel region for applying an electric field parallel to surfaces of the substrates; and

a metal layer formed on the thin film transistor.

15 2. The IPS mode LCD device of claim 1, wherein the pair of electrodes are common and data electrodes.

3. The IPS mode LCD device of claim 1, further comprising:

20 a passivation layer having a hole and deposited on an entire surface of the first substrate;

a first alignment layer deposited on the passivation layer;

a second alignment layer deposited on the second substrate; and

a liquid crystal layer formed between the first and second substrates.

4. The IPS mode LCD device of claim 3, wherein a metal layer is formed on the passivation layer.

5 5. The IPS mode LCD device of claim 4, wherein the metal layer is in contact with the gate line through the hole.

6. The IPS mode LCD device of claim 1, wherein the thin film transistor includes:

10 a gate electrode formed on the first substrate;
a gate insulating layer formed on the gate electrode;
a semiconductor layer formed on the gate insulating layer; and
source and drain electrodes formed on the semiconductor layer.

15 7. The IPS mode LCD device of claim 3, wherein the first alignment layer is formed of polyimide or photo-reactive material.

8. The IPS mode LCD device of claim 7, wherein the photo-reactive material is selected from any one of PVCN (polyvinylcinnamate) or polysiloxane based materials.

20 9. The IPS mode LCD device of claim 3, wherein the second alignment layer is formed of polyimide or photo-reactive material.

10. The IPS mode LCD device of claim 9, wherein the photo-reactive material is selected from any one of PVCN (polyvinylcinnamate) or polysiloxane based materials.

11. An in-plane switching (IPS) mode liquid crystal display (LCD) device comprising:

first and second substrates;

5 a plurality of gate and data lines crossing each other on the first substrate so as to define a plurality of pixel regions;

a plurality of thin film transistor at respective crossing points of the gate and data lines, each thin film transistor having a gate electrode, a gate insulating layer formed on the gate electrode, a semiconductor layer formed on the gate insulating layer,
10 and source and drain electrodes formed on the semiconductor layer;

a common line formed in the pixel region;

a first electrode formed on the gate insulating layer in the pixel region;

a passivation layer formed on an entire surface of the first substrate;

a second electrode on the passivation layer inside the pixel region for being
15 parallel to the first electrode; and

a metal layer formed in the gate electrode and a predetermined portion of the gate line on the passivation layer.

12. The IPS mode LCD device of claim 11, wherein the first electrode is a data
20 electrode, and the second electrode is a common electrode.

13. The IPS mode LCD device of claim 11, wherein the metal layer and the second electrode are formed at the same time.

14. The IPS mode LCD device of claim 11, wherein the metal layer and the second electrode are formed of the same metal material.

15. The IPS mode LCD device of claim 11, wherein first and second holes are
5 formed in the passivation layer.

16. The IPS mode LCD device of claim 15, wherein the metal layer is in contact with the gate line through the first hole.

10 17. The IPS mode LCD device of claim 11, further comprising:
a first alignment layer formed on the passivation layer;
a second alignment layer formed on the second substrate; and
a liquid crystal layer formed between the first and second substrates.

15 18. The IPS mode LCD device of claim 11, further comprising:
a first metal line for being in contact with the first electrode on the gate insulating alyer of the common line region; and
a second metal line for being in contact with the second electrode on the passivation layer of the common line region.

20 19. The IPS mode LCD device of claim 18, wherein the first metal line and the first electrode are formed of the same metal material.

20. The IPS mode LCD device of claim 18, wherein the second metal line and

the second electrode are formed of the same metal material.

21. The IPS mode LCD device of claim 18, wherein the first and second electrodes form a storage capacity.

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22. The IPS mode LCD device of claim 18, wherein the second metal line is in contact with the common line through the second hole.

23. The IPS mode LCD device of claim 17, wherein the first alignment layer is
10 formed of polyimide or photo-reactive material.

24. The IPS mode LCD device of claim 23, wherein the photo-reactive material is selected from any one of PVCN (polyvinylcinnamate) or polysiloxane based materials.

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25. The IPS mode LCD device of claim 17, wherein the second alignment layer is formed of polyimide or photo-reactive material.

26. The IPS mode LCD device of claim 25, wherein the photo-reactive material
20 is selected from any one of PVCN (polyvinylcinnamate) or polysiloxane based materials.

27. An in-plane switching (IPS) mode liquid crystal display (LCD) device comprising:

first and second substrates;

a plurality of gate and data lines crossing each other on the first substrate so as to define a plurality of pixel regions;

a plurality of thin film transistor at respective crossing points of the gate and data lines, each thin film transistor having a gate electrode, a gate insulating layer formed on the gate electrode, a semiconductor layer formed on the gate insulating layer, and source and drain electrodes formed on the semiconductor layer;

a common line formed in the pixel region;

a first electrode formed on the gate insulating layer in the pixel region;

a passivation layer formed on an entire surface of the first substrate;

a second electrode on the passivation layer inside the pixel region in parallel to the first electrode for being partially overlapped with predetermined portions of the gate and data lines; and

a metal layer formed in the gate electrode and a predetermined portion of the gate line on the passivation layer.

28. The IPS mode LCD device of claim 27, wherein the first electrode is a data electrode, and the second electrode is a common electrode.

29. The IPS mode LCD device of claim 27, wherein the metal layer and the second electrode are formed at the same time.

30. The IPS mode LCD device of claim 27, wherein the metal layer and the second electrode are formed of the same metal material.

31. The IPS mode LCD device of claim 27, wherein first and second holes are formed in the passivation layer.

5 32. The IPS mode LCD device of claim 31, wherein the metal layer is in contact with the gate line through the first hole.

33. The IPS mode LCD device of claim 27, further comprising:
a first alignment layer formed on the passivation layer;
10 a second alignment layer formed on the second substrate; and
a liquid crystal layer formed between the first and second substrates.

34. The IPS mode LCD device of claim 27, further comprising:
a first metal line for being in contact with the first electrode on the gate
15 insulating alyer of the common line region; and
a second metal line for being in contact with the second electrode on the
passivation layer of the common line region.

35. The IPS mode LCD device of claim 34, wherein the first metal line and the
20 first electrode are formed of the same metal material.

36. The IPS mode LCD device of claim 34, wherein the second metal line and
the second electrode are formed of the same metal material.

37. The IPS mode LCD device of claim 34, wherein the first and second electrodes form a storage capacity.

38. The IPS mode LCD device of claim 34, wherein the second metal line is in
5 contact with the common line through the second hole.

39. The IPS mode LCD device of claim 33, wherein the first alignment layer is formed of polyimide or photo-reactive material.

10 40. The IPS mode LCD device of claim 39, wherein the photo-reactive material is selected from any one of PVCN (polyvinylcinnamate) or polysiloxane based materials.

41. The IPS mode LCD device of claim 33, wherein the second alignment layer
15 is formed of polyimide or photo-reactive material.

42. The IPS mode LCD device of claim 41, wherein the photo-reactive material is selected from any one of PVCN (polyvinylcinnamate) or polysiloxane based materials.